In the claims:

Please amend claim 1 as follows:

1. (Twice Amended) A bulk CMOS or NMOS device resistant to total dose radiation failures due to charge build up in a field oxide, the device [further] comprising:

a Si substrate;

two or more FETs on said substrate;

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a field oxide region separating each FET; and

a negative voltage source for applying a steady negative back bias to a NMOS region of said substrate to increase the threshold voltage of the field oxide region to reduce leakage currents due to radiation damage in said field oxide region thereby mitigating total dose radiation effects, and

wherein a bulk CMOS or NMOS device does not include an insulator layer beneath said FETs.

Please amend claim 7 as follows:

7. (Twice Amended) A method for operating a bulk CMOS or NMOS device to resist total dose radiation effects due to charge build up in a field oxide, said method comprising the steps of:

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selecting a maximum ionizing radiation dose for operation of said bulk CMOS or NMOS device, wherein said bulk CMOS or NMOS device comprises a Si substrate; two or more FETs on said substrate; a field oxide region separating each FET; and a negative voltage source for applying a steady negative back bias to a NMOS region of said substrate to increase the threshold voltage of the field oxide region to reduce leakage currents due to radiation damage in said field oxide region thereby mitigating total dose radiation effects, and wherein a bulk CMOS or NMOS device does not include an insulator layer beneath said FETs; and

determining and applying said negative back bias to said substrate of NMOS components of said bulk CMOS or NMOS device, wherein said negative back bias is sufficient to essentially eliminate leakage currents due to total dose radiation in said field oxide region of said CMOS or NMOS device thereby providing hardness against said maximum ionizing radiation dose.